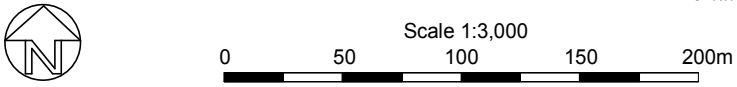
Site 49. Bateman Street Bush, Wantirna

Bushland on the Healesville Freeway reservation, extending slightly onto adjoining properties. Melway ref. 63 F4.

Site Significance Level: *State*

- The site is one of the largest and richest areas of fairly intact Valley Heathy Forest in the Melbourne region. Valley Heathy Forest is an endangered vegetation type;
- The regionally endangered Swampy Woodland is also present, in smaller amounts;
- There are numerous plant species that are threatened at various scales from locally to state-wide;
- The Healesville Freeway is proposed to occupy most of the site when and if it is built.

Aerial photograph taken February 2007



Boundaries

This 12·68 ha site is as outlined in red above. The nature strips of Clarence Rd and Bateman St are included. The eastern boundary is made up of straight segments running due north-south and east-west (on the MGA grid) that skirt around the native vegetation, mostly following old fence lines. The rest of the site boundary follows property boundaries or short extensions thereof. The site boundary that was established by Water Ecoscience in 1998 and adopted for Schedule 1 of the Vegetation Protection Overlay in the Knox Planning Scheme has been altered here to more closely reflect the current area of native vegetation. Note that home units have recently been constructed on some of the previously defined area.

Land use & tenure: Mostly unused freeway reservation that is treated by members of the public as if it were parkland; Also private land in the southeastern corner.

Site description

This site lies on the upper, northwestern flank of a low ridge, at elevations of 91-112 m. The slope varies from 2% in the west to 15% in the east, facing directions between west and north.

A junction between two sedimentary rock formations runs through the site. The Middle Silurian siltstones of the Anderson Creek formation occur in the western third of the site and the Upper Silurian sandstones of the Dargile formation occupy the rest. The latter is more resistant to erosion, leaving it with steeper, higher ground than the western third of the site. The sudden change in permeability of soil as water moves down the slope is perhaps the reason for the seepage areas in the west. This effect is enhanced in the site's southwest by curvature of contour lines at the head of a drainage line, so that this corner has the highest concentration of swamp-loving plants such as rushes.

Most of the site supports the endangered Valley Heathy Forest. The seepage areas are closer to the regionally endangered Swampy Woodland. There is a very diffuse gradation between the two vegetation types, a very similar situation to the Blind Creek Billabong area in Site 34.

The Bateman Street Bush is one of the largest and richest areas of fairly intact Valley Heathy Forest in the Melbourne region. It epitomises the distinctive characteristics of that ecological vegetation class, including the rich ground flora with many orchids. It also supports nine indigenous species of wattle – a very high number for a Victorian forest.

The plants of the Swampy Woodland are not so well represented. Many of the characteristic species of Swampy Woodland have not been recorded since 1985, including Spreading Rope-rush (*Empodisma minus*), Lanky Goodenia (*Goodenia elongata*), Long Purple-flag (*Patersonia occidentalis*), Slender Bog-rush (*Schoenus lepidosperma*) and Tufted Blue-lily (*Thelionema caespitosum*). The decline in species in the Swampy Woodland can be attributed at least partly to clearing and heavy machinery traffic in and near the site's southwestern corner, associated with activities that were supposed to be confined to neighbouring properties.

VicRoads owns most of the site, having purchased it for the proposed Healesville Freeway. No time frame has been decided for this freeway. In the interim, VicRoads intends to maintain the site's conservation values and has had a management plan prepared to guide their actions (see 'Management issues' below).

The private land in the southeastern corner appears to be at risk of urban development, as has happened elsewhere along the site's southern boundary in recent years.

Relationship to other land

The Bateman Street Bush is an ecological stepping-stone for movement of birds and insects (and consequently pollen and seeds), particularly for movements along the Dandenong Creek Valley. There is a chain of such stepping-stones from Koomba Park (part of Site 58), through Winton Farm (Site 52), the Bateman Street Bush and Site 48 to Manson Reserve (Site 47), providing an alternative, less fragmented habitat corridor than the interconnected stretch of Dandenong Creek. This is quite noticeable on satellite imagery of the area.

The Bateman Street Bush is also a regional stronghold for Valley Heathy Forest and for many plant species that are rare in the Melbourne area. Until and unless the Healesville Freeway is constructed, the site could serve as a seed resource to allow enrichment and rehabilitation of other sites with Valley Heathy Forest. It also provides a benchmark for the structure and composition of Valley Heathy Forest, which can help guide management of other sites.

Bioregion: Gippsland Plain

Habitat types

Valley Heathy Forest (EVC 127, **Endangered**): Estimated to occupy 11·1 ha. Based on the management plan by Simon Cropper of Botanicus Australia Pty Ltd, this comprises 3·8 ha in high quality, 2·7 ha in medium quality, 2·7 ha in low quality and 1·9 ha in a degraded condition.

Canopy trees: Dominated by *Eucalyptus cephalocarpa* with various combinations of *E. radiata, E. goniocalyx, E. macrorhyncha* and *E. melliodora*.

Lower trees: Patches of *Allocasuarina littoralis* and scattered *Acacia melanoxylon* and *A. mearnsii*.

Shrubs: Patchy in density and sometimes very dense. The most abundant species are *Bursaria spinosa*, *Kunzea ericoides* and various wattles, including *Acacia myrtifolia, A. paradoxa, A. pycnantha* and *A. stricta*. *Spyridium parvifolium* is also fairly abundant.

Vines: *Billardiera mutabilis* and *Comesperma volubile* are fairly abundant. The parasitic climbers *Cassytha melantha* and *Cassytha pubescens* are also fairly abundant.

Ferns: *Lindsaea linearis* and *Pteridium esculentum* are abundant.

Ground flora: Very rich in species. The layer is grassy but with the characteristic heathy elements of *Hibbertia riparia, Acrotriche serrulata, Epacris impressa, Leucopogon virgatus, Dillwynia cinerascens, Lepidosperma gunnii, Platylobium obtusangulum* and *Xanthosia dissecta*. Dominant graminoids include *Poa morrisii, Rytidosperma pallidum, Austrostipa rudis, Microlaena stipoides* and *Gahnia radula*. Some of the other species that help to characterise the vegetation include substantial numbers of *Dianella longifolia* and *Gonocarpus tetragynus*, as well as small numbers of *Leptorhynchos tenuifolius* and *Veronica gracilis*. No fewer than 31 geophyte* species have been recorded, mostly orchids. Lilies are also particularly conspicuous.

Swampy Woodland (EVC 937, **regionally Endangered**): Estimated to occupy 9,500 m², in fair ecological condition (rating C).

Dominant canopy trees: *Eucalyptus cephalocarpa* and *E. radiata*, with a trace of *E. ovata*.

Dominant lower trees: *Acacia melanoxylon* and *Exocarpos cupressiformis*.

Shrubs: Very patchy, probably as a result of past clearing. *Coprosma quadrifida* is characteristically present.

Ground flora: Grassy. Species that help to characterise the vegetation include *Allittia cardiocarpa*, *Empodisma minus*, *Glyceria australis*, *Goodenia elongata*, *Lepidosperma filiforme*, *Patersonia occidentalis*, *Schoenus lepidosperma*, *Sphaerolobium minus, Thelionema caespitosum* and *Villarsia reniformis*, but most of these species have not been recorded since 1985.

Plant species

In the following plant list, the column headed 'Risk' indicates the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; and 'V'=Vulnerable. In addition, *Austrostipa rudis* subsp. *australis* is rare throughout Victoria (Walsh & Stajsic 2007) and species with names in bold are rare throughout the Melbourne region.

Risk	Indigenous Species
E	*Acacia aculeatissima*
	Acacia dealbata
V	*Acacia mearnsii*
V	*Acacia melanoxylon*
E	*Acacia myrtifolia*
	Acacia paradoxa
E	*Acacia pycnantha*
E	*Acacia stricta*
C	***Acacia ulicifolia***
V	*Acacia verticillata*
V	*Acaena echinata*
	Acaena novae-zelandiae
	Acrotriche serrulata
V	*Adiantum aethiopicum*
C	***Allittia cardiocarpa***
V	*Allocasuarina littoralis*
C	*Amyema pendula*
	Arthropodium strictum
	Austrostipa pubinodis
V	***Austrostipa rudis* subsp. *australis***
	Austrostipa rudis subsp. *rudis*
	Billardiera mutabilis
	Bossiæa prostrata
V	*Brunonia australis*
	Burchardia umbellata
	Bursaria spinosa
V	*Caesia parviflora*
C	*Caladenia carnea*
C	***Caladenia catenata***
C	***Calochilus paludosus***
C	*Calochilus robertsonii*
	Campylopus introflexus
	Carex breviculmis
	Cassinia aculeata
	Cassinia arcuata
V	*Cassinia longifolia*
E	*Cassytha melantha*
E	*Cassytha pubescens*
E	*Centella cordifolia*
C	*Chamaescilla corymbosa*
V	*Chiloglottis valida*
	Chiloscyphus semiteres
V	*Comesperma volubile*
V	*Coprosma quadrifida*
E	*Correa reflexa*
C	***Corunastylis despectans***
V	*Crassula decumbens*
E	***Cryptostylis leptochila***
C	*Cryptostylis subulata*
E	*Daviesia latifolia*

* A geophyte is a plant whose above-ground parts die during part of the year, then sprout again from an underground organ.

Risk	Indigenous Species
E	*Daviesia leptophylla*
	Deyeuxia quadriseta
	Dianella admixta
V	*Dianella longifolia* s.l.
	Dichelachne rara
	Dichondra repens
V	*Dillwynia cinerascens*
E	*Dipodium roseum*
C	*Diuris orientis*
V	*Drosera peltata* subsp. *auriculata*
E	*Drosera peltata* subsp. *peltata*
V	*Drosera whittakeri*
	Elymus scaber
V	***Empodisma minus***
V	*Epacris impressa*
	Epilobium hirtigerum
	Eragrostis brownii
C	*Eriochilus cucullatus*
V	*Eucalyptus cephalocarpa*
	Eucalyptus goniocalyx
E	*Eucalyptus macrorhyncha*
V	*Eucalyptus melliodora*
V	*Eucalyptus obliqua*
V	*Eucalyptus ovata*
E	*Eucalyptus radiata*
V	*Exocarpos cupressiformis*
	Gahnia radula
C	*Glossodia major*
V	*Glyceria australis*
V	*Glycine clandestina*
	Gonocarpus tetragynus
C	***Goodenia elongata***
	Goodenia lanata
	Goodenia ovata
C	*Hakea nodosa*
V	*Hardenbergia violacea*
V	*Helichrysum scorpioides*
E	*Hibbertia riparia*
V	*Hovea heterophylla*
C	*Hydrocotyle ?callicarpa*
E	*Hydrocotyle foveolata*
E	*Hypericum gramineum*
C	*Hypoxis hygrometrica*
E	*Hypoxis vaginata*
E	*Imperata cylindrica*
E	*Indigofera australis*
E	*Isolepis cernua* var. *platycarpa*
E	*Isolepis hookeriana*
	Juncus bufonius
	Juncus pallidus
E	*Juncus planifolius*
	Juncus sarophorus
E	*Juncus subsecundus*
C	*Kennedia prostrata*
	Kunzea ericoides spp. agg.
	Lachnagrostis filiformis
V	*Lagenophora gracilis*
E	*Lagenophora stipitata*
	Lepidosperma elatius
E	*Lepidosperma filiforme*
	Lepidosperma gunnii
V	*Lepidosperma laterale*
C	***Lepidosperma tortuosum***
V	*Leptorhynchos tenuifolius*
	Leptospermum continentale
C	*Leucopogon virgatus*
V	*Lindsaea linearis*
	Lomandra filiformis subsp. *coriacea*
	Lomandra filiformis subsp. *filiformis*
	Lomandra longifolia
V	*Luzula meridionalis*
E	*Melaleuca ericifolia*
	Microlaena stipoides
C	*Microseris scapigera* spp. agg.
	Microtis parviflora
V	*Olearia lirata*
E	*Olearia myrsinoides*
V	*Opercularia ovata*
V	*Opercularia varia*
	Oxalis exilis/perennans
E	*Ozothamnus ferrugineus*
C	***Ozothamnus obcordatus***
	Pandorea pandorana
C	*Patersonia occidentalis*
E	*Pentapogon quadrifidus*
V	*Pimelea humilis*
V	*Plantago varia*
V	*Platylobium obtusangulum*
	Poa morrisii
E	*Poa tenera*
C	***Pomaderris lanigera***
C	***Pomaderris racemosa***
	Poranthera microphylla
E	*Prostanthera lasianthos*
	Pteridium esculentum
E	*Pterostylis melagramma*
	Pterostylis nutans
C	*Pterostylis parviflora*
V	*Pultenaea gunnii*
C	*Rumex ?brownii*
	Rytidosperma laeve
	Rytidosperma linkii var. *fulvum*
	Rytidosperma pallidum
	Rytidosperma penicillatum
V	*Rytidosperma pilosum*
	Rytidosperma racemosum
E	*Rytidosperma semiannulare*
	Rytidosperma setaceum
	Rytidosperma tenuius
	Schoenus apogon
C	***Schoenus lepidosperma***
	Senecio glomeratus
	Senecio hispidulus
E	*Senecio prenanthoides*
	Senecio quadridentatus
V	*Solenogyne dominii*
C	***Sphaerolobium minus***
E	*Spyridium parvifolium*
E	*Stackhousia monogyna*
E	*Stylidium armeria/graminifolium*

Risk	Indigenous Species
C	***Tetraria capillaris***
C	***Thelionema caespitosum***
C	*Thelymitra ixioides* s.l.
V	*Thelymitra peniculata*
	Themeda triandra
V	*Thysanotus patersonii*
E	*Thysanotus tuberosus*
	Tricoryne elatior

Risk	Indigenous Species
V	*Veronica gracilis*
C	***Villarsia reniformis***
E	*Viola hederacea*
C	***Wahlenbergia gymnoclada***
E	*Wurmbea dioica*
V	*Xanthorrhoea minor*
E	*Xanthosia dissecta*

Introduced Species

Dodonaea viscosa	*Coprosma repens*	*Oxalis pes-caprae*
Acacia baileyana	*Cotoneaster* sp.	*Oxalis purpurea*
Acacia decurrens	*Crassula multicava*	*Pinus pinaster*
Acacia elata	*Crataegus monogyna*	*Pinus radiata*
Acacia longifolia subsp. *longifolia*	*Cytisus scoparius*	*Pittosporum undulatum*
Acetosella vulgaris	*Dactylis glomerata*	*Plantago lanceolata*
Agrostis capillaris	*Ehrharta erecta*	*Prunus cerasifera*
Aira elegantissima	*Galium aparine*	*Romulea rosea*
Allium triquetrum	*Genista monspessulana*	*Rubus anglocandicans*
Anthoxanthum odoratum	*Grevillea* cultivars	*Sonchus oleraceus*
Aster subulatus	*Holcus lanatus*	*Tradescantia fluminensis*
Briza maxima	*Hypochoeris radicata*	*Trifolium repens*
Bromus diandrus	*Isolepis levynsiana*	*Triticum aestivum*
Centaurium erythraea	*Juncus microcephalus*	*Ulex europaeus*
Chrysanthemoides monilifera monilifera	*Leontodon taraxacoides*	*Vicia sativa*
Conyza sp.	*Oxalis incarnata*	*Watsonia meriana* var. *bulbillifera*

Notes concerning some of the locally threatened plant species

Acacia aculeatissima (Thin-leaf Wattle). Many plants, widely scattered, were found by Lorimer in 1998.

Acacia ulicifolia (Juniper Wattle). Last recorded in 1985.

Austrostipa rudis subsp. *australis* (a subspecies of Veined Spear-grass). At least several plants found by Lorimer in spring 1998. A summer survey would probably detect more.

Allittia cardiocarpa (Swamp Daisy). Over one dozen were found by Lorimer in 1998.

Caladenia carnea (Pink Fingers). Scarce.

Caladenia catenata (White Caladenia). Two plants found by Lorimer in 1998.

Calochilus paludosus (Red Beard-orchid). Last recorded in or about 1985 by Mr Andrew Paget.

Calochilus robertsonii (Purplish Beard-orchid). At least nine plants were found by Lorimer in 1998.

Chamaescilla corymbosa (Blue Stars). Several plants were found by Lorimer in 1998.

Chiloglottis valida (Common Bird-orchid). Last recorded in 1990-1995 by Mr Darren Wallace.

Corunastylis (=*Genoplesium*) *despectans* (Sharp Midge-orchid). Recorded by orchid expert, Mr Jeff Jeanes, in the 1990s and in several quadrats by Mr Andrew Paget in 1985. There has been no recent autumn survey to detect this species, but the habitat does not appear to have deteriorated.

Crassula decumbens (Spreading Crassula). Found by Lorimer in 1998, growing in wheel ruts.

Cryptostylis leptochila (Small Tongue-orchid). Last recorded in or about 1985 by Mr Andrew Paget.

Cryptostylis subulata (Large Tongue-orchid). At least 15 plants were found by Lorimer in 1998.

Diuris corymbosa (Wallflower Orchid). Sixteen plants were found by Lorimer in 1998.

Drosera peltata ssp. *peltata* (Pale Sundew). Last recorded in or about 1985 by Mr Andrew Paget.

Empodisma minus (Spreading Rope-rush). Last recorded in or about 1985 by Mr Andrew Paget.

Eriochilus cucullatus (Parson's Bands). Last recorded in or about 1985 by Mr Andrew Paget.

Glossodia major (Wax-lip Orchid). Only one plant was found by Lorimer in 1998.

Goodenia elongata (Lanky Goodenia). Last recorded in or about 1985 by Mr Andrew Paget.

Hakea nodosa (Yellow Hakea). At least twelve plants were found by Lorimer in 1998.

Hydrocotyle ?*callicarpa* (Small Pennywort). Last recorded in or about 1985 by Mr Andrew Paget.

Hydrocotyle foveolata (Yellow Pennywort). Many plants, widely scattered, were found by Lorimer in 1998.

Hypoxis hygrometrica (Golden Weather-glass). Last recorded in or about 1985 by Mr Andrew Paget.

Hypoxis vaginata (Sheath Star). Only one plant found in 1998. Its former habitat has been extensively bulldozed.

Imperata cylindrica (Blady Grass). Last recorded in or about 1985 by Mr Andrew Paget.

Kennedia prostrata (Running Postman). Only a few were found by Lorimer in 1998, but fire should bring more.

Lagenophora stipitata (Common Lagenophora). Last recorded in or about 1985 by Mr Andrew Paget.

Lepidosperma filiforme (Common Rapier-sedge). Only a few plants were found by Lorimer in 1998.

Luzula meridionalis var. *flaccida* (Common Woodrush). Last recorded in or about 1985 by Mr Andrew Paget.
Microseris scapigera spp. agg. (Yam-daisy). Very few seen on 26/9/99.
Microtis ?*unifolia* (Common Onion-orchid). Only one plant found, and identity uncertain.
Microtis parviflora (Slender Onion-orchid). Last recorded in or about 1985 by Mr Andrew Paget.
Ozothamnus obcordatus (Grey Everlasting). Last recorded in 1985-1990 by Mr Andrew Paget.
Patersonia occidentalis (Long Purple-flag). Last recorded in or about 1985 by Mr Andrew Paget.
Pentapogon quadrifidus (Five-awned Spear-grass). Last recorded in or about 1985 by Mr Andrew Paget.
Pomaderris lanigera (Woolly Pomaderris). One colony of twelve plants was found by Lorimer in 1998.
Pomaderris racemosa (Cluster Pomaderris). Approximately 35 plants were found in two colonies by Lorimer in 1998.
Pterostylis longifolia (=*P. melagramma*) (Tall Greenhood). Numbers not recorded.
Pterostylis parviflora (Tiny Greenhood). Last recorded in or about 1985 by Mr Andrew Paget.
Rumex ?*brownii* (Slender Dock). Last recorded in or about 1985 by Mr Andrew Paget.
Schoenus lepidosperma (Slender Bog-rush). Last recorded in or about 1985 by Mr Andrew Paget.
Sphaerolobium ?*minus* (Globe-pea). Last recorded some time in 1990-1995 by Mr Darren Wallace.
Spyridium parvifolium (Australian Dusty Miller). Abundant.
Tetraria capillaris (Hair-sedge). Last recorded in or about 1985 by Mr Andrew Paget.
Thelionema caespitosum (Tufted Blue-lily). Last recorded in or about 1985 by Mr Andrew Paget.
Thelymitra ixioides var. *ixioides* (Dotted Sun-orchid). Last recorded in or about 1985 by Mr Andrew Paget.
Thysanotus tuberosus (Common Fringe-lily). Last recorded in or about 1985 by Mr Andrew Paget.
Villarsia reniformis (Running Marsh-flower). Last recorded in c.1992 by Mr Darren Wallace.
Viola ?*sieberiana* (Tiny Violet). Last recorded in or about 1985 by Mr Andrew Paget, somewhat dubiously.
Wahlenbergia gymnoclada (Naked Bluebell). An unusually large population was discovered by Lorimer in 1998.
Wurmbea dioica ssp. *dioica* (Common Early Nancy). Scattered, and apparently not abundant (Lorimer, 1998).

Fauna of special significance

Endangered Nationally

Regent Honeyeater – a single bird was observed in November1993 by naturalist, Mr Greg Bain. This is part of a pattern of infrequent observations of this species between Wantirna and Bayswater, but bird observers who regularly go to the site suggest that frequent visitation by Regent Honeyeaters would not have escaped their attention.

Vulnerable in Victoria

Powerful Owl – a record from July 1999 appears in the Atlas of Victorian Wildlife. Occasional records of this species arise throughout the eastern suburbs, even in residential gardens, so the observation is not taken as highly significant.

Rare or Threatened in Knox (but not all of Melbourne)

Sugar Gliders, found by residents in April 2004 and taken to a wildlife shelter.

Fauna habitat features

- Some of the mature eucalypts have hollows suitable for nesting or roosting by native birds, bats, possums or insects;
- The high density and diversity of shrubs significantly improves the habitat for native insects and birds. The prickliness of many of the shrubs helps protect birds from cats at large;
- Swampy depressions probably allow Southern Brown Tree Frogs to breed.

Significance ratings

The following is an assessment of the site's significance against the Department of Sustainability & Environment's standard criteria (Amos 2004).

Ecological Integrity and Viability

Criterion 1.2.6 accords **Local** significance to any site like this that fits the description, 'Important at local scale - Link between individual remnant habitat blocks or within subcatchment'.

Richness and Diversity

Criterion 2.1.1 accords **Regional** significance to any site whose richness in native species puts them among the top 5% when compared with similar sites in the bioregion. This fits the Bateman Street Bush.

Endangered Vegetation Types

Both vegetation types present are listed as regionally Endangered. It follows from Appendix 3 of *Victoria's Native Vegetation Management - a Framework for Action* (NRE 2002a) that the site's native vegetation is necessarily of at least High conservation significance. This, in turn, gives the site State significance under criterion 3.2.3.

Rare or Threatened Flora

Criterion 3.1.2 attributes **Regional** significance to any site with known habitat for a small population of a species that is listed as rare or threatened in Victoria. This applies to the Bateman Street Bush in the case of *Austrostipa rudis* subsp. *australis*. A summer survey may discover that the population of this taxon is larger than could be detected during past surveys, in which case the significance level could rise to State.

Many of the other locally threatened plant species listed above have viable populations, thereby meeting criterion 3.1.5 for a site of **Local** significance.

Rare or Threatened Fauna

Sugar Gliders are threatened locally but not throughout the whole Gippsland Plain bioregion. The presence of at least one family found in the site in April 2004 gives the site **Local** significance on the same basis as the plants just discussed.

Criterion 3.1.2 confers at least Local significance on sites that provide habitat for species that are threatened in Victoria. The Regent Honeyeater is such a species, but the habitat in the Bateman Street Bush would represent only a tiny fraction of the habitat of any bird of this migratory or nomadic species. Taking into account the pattern of recurring observations of this species in the area of Wantirna to Bayswater, the habitat at Bateman Street Bush could be regarded as **Locally or Regionally** significant.

Similar considerations apply to the single observation of a Powerful Owl in the site, at a time of year when adult birds would be breeding. This only warrants Local significance.

Threats

- Invasion by environmental weeds, of which the following are rated Very Serious: Boneseed (*Chrysanthemoides monilifera*), Monterey Pine (*Pinus radiata*), Sweet Pittosporum (*Pittosporum undulatum*), Gorse (*Ulex europaeus*) and Bulbil Watsonia (*Watsonia meriana*). Blackberry (*Rubus discolor*) would also be very serious if not for periodic application of herbicide;
- Illegal incursions by vehicles and machinery, particularly motorbikes;
- Dumping of rubbish and garden waste by neighbours;
- Critically small population sizes of some plant species; e.g. only two *Lycopus australis* were found;
- Cats killing wildlife.

Management issues

- Management can be guided in general by the 2000 report, *'Flora and Fauna Survey and Management Plan for Bateman Street Bushland'* by S. Cropper (Botanicus Australia Pty Ltd) for VicRoads;
- Weed control is the highest ecological priority for management of the Bateman Street Bush;
- Regeneration of the native vegetation requires ecological burning as hot as safety allows, one section of the site at a time and at intervals of several years. The suggestions for autumn burning in the management plan just cited should be treated with care, because if this were applied to an area with much Large Quaking-grass (*Briza maxima*) or Sweet Vernal-grass (*Anthoxanthum odoratum*), the result would probably be a serious worsening of these very serious weeds. Such areas should only be burned in November or early December when conditions allow a rather hot fire, or after grass-specific herbicide is applied during this period.

Administration matters

- It would be desirable to have a botanist check in autumn for the continued existence of the nationally listed orchid, *Corunastylis* (=*Genoplesium*) *despectans*. A summer inspection for *Austrostipa rudis* subsp. *australis* would also be desirable, but less important;
- This site is extremely worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its State significance, the endangered EVCs, the significant plant species, the habitat for native fauna and potential subdivision pressure;
- The Planning Scheme zoning is variously Residential 1 Zone (R1Z), Residential 2 Zone (R2Z) and Road Zone Category 1 (RDZ1);
- The site is included under the existing Vegetation Protection Overlay Schedule 1 of the Knox Planning Scheme, albeit with slightly different boundaries that were obtained from Site 6 of the report by Water Ecoscience (1998).

Information sources used in this assessment

- The report, *'1998 Flora Survey of Bateman Street Bush, Wantirna'* by G.S. Lorimer for Knox Environment Society, plus the underlying field data. The fieldwork took twelve hours during October and early November 1998. It included mapping, compilation of lists of indigenous and introduced plant species, and checks for ecological threats, management issues and populations of scarce or threatened plant species;

- Several other inspections of the site by the author during springtimes since the mid- to late-1980s;
- A re-inspection of the site by Dr Lorimer in December 2007 to ensure that the information presented here would remain relevant;
- A re-inspection of the southern boundary in May 2010 to determine adjustments to account for residential development on some of the land formerly included in the site;
- The 2000 report, *'Flora and Fauna Survey and Management Plan for Bateman Street Bushland'* by S. Cropper (Botanicus Australia Pty Ltd) for VicRoads;
- Data from thirty-six quadrats (DSE numbers N13101-N13137, except the missing quadrat N13113) compiled by Mr Andrew Paget in June and July 1985, although some species such as *Eucalyptus bridgesiana* are treated here as unreliable;
- A list of additional species seen by Mr Paget during 1985-1990 that were not found in his quadrats;
- Discussion with orchid expert, Mr Jeff Jeanes, in the late 1990s and 2003 about his personal observations of orchids;
- A written list and verbal description of personal observations of plants seen by reliable naturalist, Mr Darren Wallace, during 1990-1995;
- Discussion with biologist Mr Greg Bain, who observed the Regent Honeyeater at the Bateman Street Bush in 1993;
- Aerial photography from February 2001, April 2003, February 2007 and December 2009;
- Satellite imagery of the district;
- The Department of Sustainability & Environment's BioMaps of the area;
- Maps of geology and topography produced by agencies of the Victorian government.